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Heat Stroke

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Heat Stroke



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University of South Dakota
School of Medicine, Vermillion
and
South Dakota State University
Cooperative Extension Service, Brookings

Heat Stroke

Dr. Eberhard H. Heinrichs
Medical Director,
USD Student Health Service

The first few really hot days are a pleasure to South Dakotans who remember the preceding long, cold winter. But during a continuing heat wave of over 100° F, farmers, ranchers, and others who are constantly exposed to those temperatures should think twice about the danger of heat stroke.

Although heat stroke happens rarely, it is not a condition to be taken lightly. Half of all cases could result in death if the proper treatment is not given.

The purpose of this fact sheet is to make South Dakotans aware of the symptoms and treatment of heat stroke. But the underlying message is how to prevent it.

What is heat stroke?

Heat stroke occurs when the body's heat regulating center in the brain malfunctions and the body no longer can rid itself of its excess heat.

Normally, when the temperature in the body rises, it cools itself in two ways:

- 1) by vasodilatation—blood vessels close to the skin surface open up to facilitate cooling, giving the skin a flushed look;
- 2) by perspiration—the evaporation of water on the skin surface.

In heat stroke, the person's heat regulating center quits working, the body temperature rises to over 105° F, perspiration stops, and the skin is hot and dry.

Heat exhaustion (or heat prostration) also is caused by prolonged exposure to heat.

But the symptoms and treatment are very different: The regulation of the body temperature by adjustment of the vasculatory system fails and the patient is cold and has a clammy skin and a body temperature that is normal or sub-

normal. Treatment is directed toward support of the circulatory system. A doctor should be called.

Symptoms of heat stroke

Heat stroke is more likely to occur under certain conditions. People who have previously had a heat stroke are very susceptible to a recurrence. Other conditions that increase the possibility of heat stroke are chronic heart, lung, or kidney disease; diabetes; advancing age; alcoholism; and treatment with certain medications, such as tranquilizers, which also affect the temperature regulation.

High temperature and high humidity are two environmental factors which heighten the chance for heat stroke. Temperatures over 100° F are especially dangerous when a person's body is not yet adjusted to high temperatures.

Three times when you should be careful are:

- 1) the second really hot day of spring or summer,
- 2) a heat wave, and
- 3) when you are in a region to which you are not acclimated or adjusted (for example, when traveling in an area much hotter than South Dakota).

High humidity compounded with high temperatures increases the chance for heat stroke. High humidity hinders the body's cooling because the air is too saturated to evaporate perspiration from the skin surface. This is a crucial factor because the cooling occurs by the evaporation of the water from the sweat.

First aid

Heat stroke should be suspected when four conditions are present:

- 1) the body temperature is over 105° F,
- 2) the skin is hot and dry,

- 3) the environmental temperatures are very hot, and
- 4) the environmental humidity is very high ("sticky").

If you find an individual who is unconscious and these four circumstances are present, this person most likely has suffered a heat stroke.

Immediate treatment is essential. You have to cool the person's high body temperature down to normal levels quickly. If you find the victim in a field, get him into the shade or the house. If you are unable to move him, try to cool him by removing clothing and using it as a fan. If cool water is available, use it on the victim.

In a house, you will have more cooling devices at your disposal. The best method is an ice water bath (cold water in a bathtub with ice cubes added). A cold shower is also effective.

It is important to **contact a physician as soon as possible** to give you instructions and dispatch help. Before help comes, take the victim's temperature every 2 or 3 minutes. When it falls to 101° F rectally (100° orally) take the person out of the tub and put him in a cool room. Continue to check his temperature; if it rises again, the ice water bath must be resumed immediately.

If you are unable to cool the person down sufficiently and you live close to a hospital, take the victim to the emergency room as soon as possible or call an ambulance. It would be advisable to sponge the person's head with a cold, wet cloth on the way to the hospital.

How to avoid heat stroke

Since unconsciousness usually follows quickly after the perspiration has stopped, it is hard for you

to realize that you are about to have a heat stroke.

Therefore, if you feel very hot and notice that you have stopped sweating on a hot and humid day, move immediately into a cool place. Rest there and try to cool yourself down by removing clothing or soaking yourself down with water if it's available.

Do not try to walk very far alone. Physical exertion will worsen your situation. Call for assistance. If someone can help you to the house have your temperature taken. If it is over 105° F, a physician should be called to give instructions. An ice water bath or cold shower will probably be recommended until help comes.

A higher than usual intake of salt with liquids will lessen the problems of heat as it affects the body; however, by itself, this is not a

preventive measure against heat stroke.

The best thing you can do to avoid becoming a heat stroke victim is to stay cool on hot and humid days and not overexert yourself.

Preventions

Everyone should follow five simple rules in hot and humid weather, especially if he has those individual conditions which increase the possibilities of heat stroke:

- 1) Drink plenty of water.
- 2) Acclimatize yourself to hot weather by slowly increasing exposure to it.
- 3) Dress appropriately (wear a hat!).
- 4) Limit physical exertion until your body is acclimatized (physical exertion merely

creates more heat that the body must rid itself of).

- 5) Don't stay out alone in hot and humid weather.

Remember

Heat prostration: The skin is cold and clammy. Call a doctor immediately.

Heat stroke: The skin is hot and dry. Cool the victim by the best practical means available, and the more rapidly, the better. Cool the head (or brain) if you cool nothing else.

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